VERSION WITH MARKINGS TO SHOW CHANGES MADE

Claims 5-13 have been amended as follows:

--5. (amended) Process according to ~~one of Claims 1 to 4,~~claim 1, characterized in that the wire feed speed (V_{wire}) is between 1 and 20 m/min, preferably between 2 and 15 m/min.--

--6. (amended) Process according to ~~one of Claims 1 to 5,~~claim 1, characterized in that the pulse frequency is between 20 and 300 Hz, preferably between 50 and 200 Hz.--

--7. (amended) Process according to ~~one of Claims 1 to 6,~~claim 1, characterized in that the ratio (I_{rms}/I_{mean}) of the rms current (I_{rms}) value to the mean current (I_{mean}) value is between 1.05 and 2, preferably between 1.1 and 1.8.--

--8. (amended) Process according to ~~one of Claims~~claim 1,~~2 or 5 to 7,~~ characterized in that the workpiece or workpieces to be welded are made of carbon steel and in that the ratio (I_{rms}/I_{mean}) of the rms current (I_{rms}) value to the mean current (I_{mean}) value is between 1.05 and 2, preferably between 1.05 and 1.6.--

--9. (amended) Process according to ~~one of Claims~~claim 1,~~3 or 5 to 7,~~ characterized in that the workpiece or workpieces to be welded are made of stainless

steel and in that the ratio (I_{rms}/I_{mean}) of the rms current (I_{rms}) value to the mean current (I_{mean}) value is between 1.05 and 2, preferably between 1.1 and 1.8.--

--10. (amended) Process according to ~~one of Claims 1 or 4 to 7,~~ claim 1, characterized in that the workpiece or workpieces to be welded are made of aluminium or aluminium alloy and in that the ratio (I_{rms}/I_{mean}) of the rms current (I_{rms}) value to the mean current (I_{mean}) value is between 1.05 and 2, preferably between 1.05 and 1.5.--

--11. (amended) Process according to ~~one of Claims 1 to 10,~~ claim 1, characterized in that the gas shield consists of a gas or gas mixture chosen from helium, argon, carbon dioxide, oxygen, nitrogen and hydrogen and/or in that the consumable wire has a diameter of between 0.6 mm and 2.2 mm, preferably between 0.8 mm and 1.6 mm.--

--12. (amended) Process according to ~~one of Claims 1 to 11,~~ claim 1, characterized in that the welding is of the pulsed MIG or pulsed MAG type and in that the wire is a solid wire or a flux-cored wire.--

--13. (amended) Pulsed arc welding device, capable of implementing a process according to ~~one of Claims 1 to 12,~~ claim 1, comprising:

- frequency selection means for setting, adjusting

or selecting a pulse frequency;

- wire speed selection means for setting, adjusting or selecting a wire feed speed (V_{wire});
- means for determining the mean current (I_{mean}) and rms current (I_{rms}) values making it possible to determine or calculate at least one mean current (I_{mean}) value and at least one rms current (I_{rms}) value such that:

  $I_{mean} = A_1V_{wire} + B_1$, where $5 < A_1 < 45$ and $5 < B_1 < 50$ and

  $I_{rms} = A_2V_{wire} + B_2$, where $5 < A_2 < 45$ and $45 < B_2 < 110$,

  where I_{mean} and I_{rms} are expressed in amps and V_{wire} is expressed in m/min; and
- current adjustment means for adjusting the welding current in response to the determination or calculation of the mean current (I_{mean}) and rms current (I_{rms}) values by the said means for determining the mean current (I_{mean}) and rms current (I_{rms}) values;
- preferably it includes or consists of at least one welding current generator.--